

REMARKS**I. Status of the Claims:**

Claims 1-12 are currently pending in the application.

II. Rejections Under 35 U.S.C. §102:

Claims 1-12 are rejected under 35 U.S.C. § 102(b) as being anticipated by Atalar et al. (US 6,263,229). The Applicant respectfully traverses the rejection of these claims for at least the following reasons.

Claim 1 is directed to a magnetic resonance imaging receive circuit, comprising: (a) a first portion including an rf antenna and decoupling circuitry adjacent to the antenna; (b) a spaced-apart second portion including mode control circuitry for causing the decoupling circuitry to switch the circuit between an rf receive mode in which the antenna is tuned for receipt of an rf signal, and a decoupled mode in which end terminals of the antenna are held at a substantially equal DC bias potential; and (c) balanced cables connecting the first and second portions, the cables transmitting a DC control to the decoupling circuitry when the circuit is in decoupled mode, and transmitting differential rf signals to the second portion when the circuit is in receive mode.

The present invention of claim 1 requires the use of balanced cables which connect first and second portions of the circuit, the cables transmitting DC when the device is in a decoupled mode and differential RF signals when the device is in a receive mode. The use of balanced cables, in this way, provides for example a convenient means of supplying a decoupling bias to the coil, when necessary, while also ensuring that the coil is balanced with respect to ground at RF frequencies.

Atalar discloses a variety of methods of manufacturing magnetic resonance catheter coils, none of which disclose or suggest the arrangements of claims 1-12. For example, Atalar shows and describes in the various Figures the following:

- Atalar shows, in Figures 1, 1a and 1b, a flexible coil which is tuned and matched capacitively in section 12, using a coaxial cable 20 and pin diode decoupling.
- Figures 2, 2a, 2b, 2c and 2d focus solely on the construction of the coil and the matching network (sections 2 and 12 in Figure 1).
- Figures 3, 4 and 5 focus on the manufacture the design shown in Figures 1, 1a and 1b.
- Figure 6 shows a board design that is essentially the same as the one shown in Figures 1, 1a and 1b except that a MOSFET is employed to provide decoupling.
- Figures 7 and 8 focuses on decoupling in the case of quadrature coils.
- Figure 9 shows yet another decoupling circuit.
- Figure 10 shows a version for transmit/receive with receive only capability.
- Figure 11 shows a version with an integrated preamp.
- Figure 12 shows a cross-sectional detail of the manufactured board.

All of the circuits shown and described in Atalar, however, are *unbalanced* at RF frequencies. The concept of balancing is not mentioned nor envisaged, and accordingly the devices shown do not include any “balanced cables” as required by part (c) of claim 1. Indeed, as may best be seen in Figure 1, the coil is directly connected to the shield of the coaxial cable (24), an arrangement which is of necessity unbalanced at RF. Atalar simply does not address or even acknowledge the possibility of providing RF balancing. Further, contrary to the Examiner’s assertions, no baluns (balanced to unbalanced circuits) are shown or are contemplated in any way.

In view of the foregoing, claim 1 and its dependent claims are not anticipated by Atalar and are distinguishable over the same. Reconsideration and withdrawal of the rejection of these claims are respectfully requested.

CONCLUSION

Based on the foregoing amendments and remarks, the Applicant respectfully requests reconsideration and withdrawal of the rejection of claims and allowance of this application.

AUTHORIZATION


The Commissioner is hereby authorized to charge any additional fees which may be required for consideration of this Amendment to Deposit Account No. 13-4500, Order No. 4586-4003.

In the event that an extension of time is required, or which may be required in addition to that requested in a petition for an extension of time, the Commissioner is requested to grant a petition for that extension of time which is required to make this response timely and is hereby authorized to charge any fee for such an extension of time or credit any overpayment for an extension of time to Deposit Account No. 13-4500, Order No. 4586-4003.

Respectfully submitted,
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